

Facts and Myths about Pyrrole Disorder: Dr. Mensah Answers your Questions

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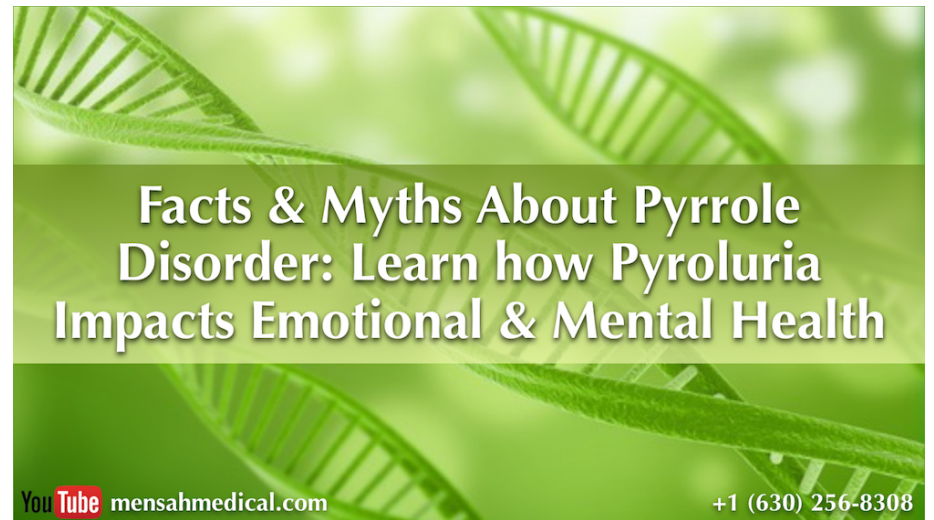
This lecture is presented by Albert Mensah, M.D. and was originally hosted as a webinar. The archive is available on YouTube. Use these outline notes in this PDF file as a guide while you listen to the recorded talk.



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Join Albert Mensah, MD, as he debunks the common myths surrounding **pyrrole disorder** or pyroluria (also known as the “Mauve Factor”). About **10% of the population** is unknowingly affected by this condition, and is commonly found in individuals with anxiety, depression, schizophrenia, bipolar disorder, substance abuse, alcoholism, ODD, and ADHD. Discover how pyrrole disorder can be easily diagnosed and treated by restoring the body with necessary nutrients. Good mental health requires proper neurotransmitter activity. Learn how imbalances such as severe overloads or deficiencies of specific minerals, vitamins, and amino acids can significantly alter this activity in the brain.



Dr. Albert Mensah is an internationally recognized physician-specialist in metabolic treatment approaches for patients with developmental, behavioral, learning and mental health issues. He is the president and co-founder of Mensah Medical, a biomedical outpatient clinic of physicians and nurses who encompass the best of traditional medicine and natural medicine based on biochemical evaluation, evidence-based research and clinical experience. Dr. Mensah utilizes a non-drug, nutrient approach targeted to correct biochemical imbalances that may be associated with anxiety, fears, autism, ADHD, learning disabilities, eating disorders, bipolar disorder, depression, school phobias, mood swings, aggressive or violent behavior, childhood and adult schizophrenia, Alzheimer's disease and Parkinson's Disease. Patients can be seen at our main clinic located just outside of **Chicago**, and in select cities at U.S. Outreach Clinics located near **San Francisco** and **Los Angeles**, and in **Annapolis, Maryland**, **Scottsdale, Arizona**, and **Fort Lauderdale, Florida**.

What is Pyrrole Disorder?

- Pyrrole Disorder (pyroluria) is an abnormality in biochemistry resulting in the overproduction of pyrrole molecules, normal by-products of hemoglobin synthesis and other processes in the body.
- Excess pyrroles have little or no function in the body and are effectively excreted in the urine; however, pyrroles have an affinity for zinc and may contribute to zinc deficiency by increasing its urinary loss.
- When elevated in the urine, they represent a marker for functional deficiencies in Vitamin B-6 and zinc.

Clinical Experience

- 10,000 Behavior
- 5,600 ADHD
- 3,500 Schizophrenia & Bipolar Disorder
- 3,200 Depression & Anxiety
- 6,500 Autism

History of Pyrrole Disorder

- In 1958, Abram Hoffer, MD, PhD, first detected “Mauve Factor” or “Mauve” (named for its appearance on paper chromatograms) in the urine of schizophrenic patients and found success in treatment with large doses of vitamin B3.
- In 1965, O’Reilly reported mauve elevations in affective psychosis, alcoholism, psychoneurosis, and behavior-disordered children.
- In 1971, Carl Pfeiffer, MD, PhD, and his team discovered the clinical response of high-mauve subjects to vitamin B-6 and zinc and saw remarkable improvements in a series of 1,000 patients.
- Researchers later identified mauve as hydroxyhemopyrrolin-2-one (HPL), referred to as “urinary pyrrole” or simply pyrrole, a hemoglobin metabolite that binds with pyridoxine (vitamin B-6) and zinc.
- By the late 1980’s, Carl Pfeiffer, MD, PhD, and William J. Walsh, PhD, discovered that supplementation of PLP versus Vitamin B-6 appeared to benefit nearly all B-6 deficient patients, and this practice is still in use today.

Pyroluria and Oxidative Stress

- Most mental disorders involve oxidative stress, and elevated pyrroles may be secondary to a number of other biochemical conditions. Excessive release of free radicals can destroy cells or impair biochemical processes.
- Pyrrole is a natural organic chemical containing a five-membered ring with the formula C_4H_4NH .
- Pyrroles are involved in the synthesis of heme, the primary constituent of hemoglobin. They have an affinity for binding with PLP and zinc, resulting in these valuable nutrients being transported out of the body together with the pyrroles.
- More than 90% of persons diagnosed with depression, behavioral disorders, ADHD, autism, and schizophrenia exhibit depleted plasma zinc levels. Severe oxidative stress depletes zinc stored in the body.

Vitamin B-6 and Zinc Deficiency

- Vitamin B-6 in the form of PLP is required for the synthesis of dopamine and GABA in the brain. A genetic or acquired deficiency of B6 can result in abnormally low levels of these important neurotransmitters and a myriad of problems, including ADHD, depression, anxiety and sleep disorders.
- In addition to the production of neurotransmitters, vitamin B-6 is involved in more than 80 biochemical reactions in the body. Vitamin B-6 deficiency can produce physical symptoms including nervousness, insomnia, and muscle weakness.
- Zinc has many important roles in brain function and is required for the efficient conversion of dietary B-6 into PLP. It has a special role in the activation and inhibition of NMDA receptors that are essential to good mental health.
- Zinc deficiency results in altered brain levels of GABA and can cause copper overloads that alter brain levels of dopamine and norepinephrine. It is also associated with delayed growth, temper control problems, poor immune function, epilepsy, hormone imbalances, neurodegenerative disorders, and learning problems.

Walsh, William J. *Nutrient Power*. New York: Skyhorse Publishing, 2012.

High Incidences of Pyrrole Disorder

- Alcoholism
- Autism/Asperger's
- Anxiety disorder
- Antisocial Personality Disorder
- AD(H)D
- Bipolar Disorder
- Criminal behavior
- Depression
- Tourette syndrome
- Down syndrome
- Epilepsy
- Learning disability
- Mood Swings
- Neuroses
- Psychosis
- Oppositional Defiant Disorder
- Substance abuse
- Schizophrenia

Incidence of Pyrrole Overload in Clinical Populations

(Walsh Research Institute database of 30,000 patients)

ADHD	18%
Behavioral Disorder	28%
Autism	35%
Depression	24%
Bipolar Disorder	35%
Schizophrenia	30%
Post-Traumatic Stress	12%
Alzheimer's Disease	14%
Healthy Controls	8%

Symptoms and Traits of Pyroluria

Most pyrolurics experience 50% of following symptoms and traits:

- **poor stress control**
- elevated kryptopyrroles in urine
- **sensitivity to bright lights**
- morning nausea
- tendency to skip breakfast
- acne or very dry skin
- pale skin, inability to tan
- **high irritability and temper**
- history of underachievement
- little or no dream recall
- autoimmune disorders
- white spots on fingernails
- poor growth
- coarse eyebrow hair
- stretch marks (striae) on skin
- **severe depression**
- fear of airplane travel, tornadoes, etc.
- obsessions with negative thoughts
- delayed puberty
- dark or mauve-colored urine

Symptoms and Traits (Cont'd)

- **severe oxidative stress**
- poor short-term memory
- **sensitivity to loud noises**
- affinity for spicy and salty foods
- abnormal fat distribution
- delicate facial features
- **extreme mood swings**
- history of a reading disorder
- **severe inner tension**
- frequent infections
- premature graying of hair
- abnormal or absent menstrual periods
- poor muscle development
- "fruity" breath and/or body odor
- **spleen-area pain**
- **severe anxiety**
- **histrionic behavior**
- joint pains
- poor wound healing
- psoriasis
- highly abnormal sleep cycle
- abnormal EEG

Bipolar Disorder or Pyrrole Disorder?

William J. Walsh, PhD, of the Walsh Research Institute, indicated that bipolar patients fit into four major biochemical classifications (based on his chemistry database of 250,000 assays and 1,500 bipolar patients).

These include:

- Undermethylation
- Overmethylation
- Copper/Zinc imbalance
- **Pyrrole Disorder (severe oxidative stress)**

In our clinical experience, patients with extreme highs and lows (**Rapid Cycling Bipolar Disorder**) often exhibit severely elevated pyrroles.

Severe Oxidative Stress in Schizophrenia

- About 30% of schizophrenic patients exhibit severe pyroluria and this condition involves free radical oxidative stress and depletion of protective proteins.
- Oxidative overloads from any source can cause psychosis in sensitive individuals by lowering glutamate neurotransmitter activity at the NMDA receptors in the brain.
- Oxidative stress depletes levels of glutathione (GSH) needed for efficient NMDA function.
- Biochemical markers for this condition include elevated pyrroles, low plasma zinc, depressed serum glutathione, elevated non-ceruloplasmin serum copper, and many others.
- Pyroluric schizophrenics may have a combination of delusions and auditory hallucinations. The onset usually occurs during a period of extreme stress.

Children with Pyrrole Disorder

- Pyrrole Disorder as a distinctive biochemical imbalance is often exhibited in children and adolescents with ADHD, autism, asperger's, anxiety, tourette syndrome, behavioral disorders (including ODD), fears/phobias, sensory processing disorder, learning disorders, and with normal growth cycles (the “terrible twos” and adolescence).
- Common symptoms include high irritability and temper, poor stress control, frequent infections, poor short-term memory, and sensitivity to light and sound.
- Physical signs include white spots on finger nails, sweet or “fruity” breath, pale skin that burns easily, and poor wound healing.
- In teenagers, depression, pessimism, severe mood swings, or a prior diagnosis of Bipolar Disorder is common. Often times these individuals withdraw socially and have a tendency to stay up late.

DSM-5: Temper Dysregulation Disorder?

- Partially out of concern that the diagnosis of Bipolar Disorder in children may have become far too popular among psychiatrists, it has now been proposed that a new diagnosis known as Temper Dysregulation Disorder (TDD) come into play.
- Severe tantrums, bizarre shifts in mood/behavior, and poor response to small stressors are some of the symptoms including a prior diagnosis of ADHD, learning disabilities, or oppositional defiant disorder. These symptoms and traits strongly correspond to Pyrroluria and we encourage parents to test these children for Pyrrole Disorder.
- Children being treated for Pyrrole Disorder may respond quickly to nutrient therapy and improvements are often reported during the first week.

Pyroluric Depression

- A double deficiency in zinc and vitamin B-6 results in a tendency for low brain levels of serotonin, dopamine and GABA, a recipe for depression and anxiety.
- Female pyrolurics may report disturbed menstrual periods or amenorrhea (absence of periods).
- For males and females, they are often prone to delayed puberty and significant growth after age 16.
- Other symptoms include severe inner tension, short fused reactions, poor immune function, morning nausea, migraines, fatigue, insomnia, reading disorders, and academic underachievement regardless of intelligence.
- As a genetic condition, it often runs in families. If you find yourself behaving quite similarly to your hot-tempered parent, you may want to consider testing for pyroluria.
- In many cases, depressed persons exhibit **more than just one biochemical imbalance.**

Other Nutrient Imbalances

- A genetic or epigenetic imbalance in a nutrient can alter brain levels of key neurotransmitters and result in abnormal brain chemistry.
- **Vitamin D deficiency** has been associated with depression, schizophrenia, ADHD and other mental disorders.
- **Undermethylation** (methyl-deficiency) is associated with depression, eating disorders, obsessive compulsive disorder (OCD), and perfectionism.
- Patients with **overmethylation** (folate-deficiency) have a tendency for high anxiety, panic disorder, depression, including sensitivities to pesticides, toxic chemicals and foods.
- **Copper overload** tends to lower dopamine levels and increase norepinephrine in the brain. Imbalances in these important neurotransmitters have been associated with paranoid schizophrenia, ADHD, bipolar disorder, postpartum depression and violent behavior.
- **Fatty acid imbalances** has been associated with depression, ADHD, schizophrenia, bipolar disorder and dementia.

Genetic or Epigenetic?

- Some persons have a genetic or acquired tendency for very elevated levels of pyrroles, which can result in a deficiency of both PLP and zinc.
- A genetic Pyrrole Disorder can result in low serotonin and GABA levels, and SSRI antidepressants and anti-anxiety medications may be beneficial. However, targeted therapeutic dosages of supplements may provide similar benefits without medication side effects.
- Since Pyrrole Disorder is a marker for oxidative stress, there may be an increased need for Vitamin B-6 and zinc under these circumstances. It is likely that the symptoms of Pyrrole Disorder will reoccur if nutrient-based therapy is stopped.
- Furthermore, since stress, illness and injury all exacerbate zinc deficiency and Pyrrole Disorder, individuals respond to treatment more rapidly when these factors are absent, and may relapse in times of stress or illness.
- Because of genetic variations, pyroluria may have a variety of outcomes for different persons. **Everyone is biochemically unique.**

Common Myths and Facts

FACT: Severe stress is a cause of Pyrrole Disorder. *Stressful life events or trauma increases associated symptoms and excretion of pyrroles.*

MYTH: Omega-3 fatty acids are good for everyone.

FACT: Pyroluric individuals tend to worsen if given fish oils, DHA, EPA, etc. This is due to poor processing of arachidonic acid.

MYTH: Pyrrole Disorder causes thyroid disease.

FACT: Pyrrole molecules in general do not cause organic disease. They are in fact reflective markers of oxidative stress caused by organic disorders like thyroid disease, cancer, sickle cell anemia, broken limbs, colds and flus, and emotional turmoil or trauma. Furthermore, correcting pyroluria in these cases will not fix the organic syndrome.

Common Myths and Facts

FACT: The symptoms of pyroluria are frequently mistaken for signs of other psychiatric illnesses, mental or behavioral disorders. Misdiagnosis is very common. When an individual is under the care of an experienced physician with appropriate laboratory testing, nutrient therapy treatment can dramatically improve the individual's symptoms and quality of life.

MYTH: Treatment for Pyrrole Disorder requires a complex of multiple micronutrients.

FACT: Treatment for Pyrrole Disorder requires therapeutic dosages of key micronutrients only.

Testing for Pyrrole Disorder

Pyrrole Disorder is diagnosed by finding elevated kryptopyrroles in urine. Laboratory testing will indicate whether an individual has a numerical Pyrrole Disorder. Interpretation and correlation of a patient's medical history, symptoms, and laboratory test results together allow for an accurate diagnosis of Pyrrole Disorder by an experienced physician. Often times, borderline cases are seen by test result and do not alone indicate Pyrrole Disorder in an individual.

We utilize **Direct Health Care Access II Inc** (www.pyroluriateesting.com) for pyroluria testing. They are the only laboratory in the U.S. that reports both an actual (uncalculated) and a calculated (corrected) kryptopyrrole result. The calculated result compensates for concentration changes in the urine specimen result, allowing for more accurate test results.

Treatment for Pyrrole Disorder

- Pyrrole Disorder is corrected by supplementing **individualized, therapeutic dosages** of Vitamin B6, pyridoxine-5-phosphate (the active form of Vitamin B-6) and zinc, and other supportive nutrient elements i.e., Vitamin C, Vitamin E, and evening primrose oil.
- If no other chemical imbalances are present, individuals with mild or moderate symptoms of Pyrrole Disorder may see a response to treatment in two to four (2-4) weeks.
- Individuals with more severe symptoms usually require one to three (1-3) months before some improvement is seen, with greater improvement occurring gradually over three to 12 months.